

## ABSTRACT

The invented voltage regulator is a solid state low voltage regulator for quartz halogen or low voltage incandescent lamps and quartz halogen or low voltage incandescent lamp or LED array circuits wherein the volt regulator reduces a conventional mains power line source of, for example, a 115 volt AC to 480 V AC power source, to within a range of from 11.0 volts to 12.5 volts, preferably 11.6 volts, wherein the lamps, and LED arrays have consistent color, consistent light output, the lamp filaments and LED arrays are exposed to soft start operating currents and lamp and array life can be increased. The voltage regulator utilizes an AC rectifier circuit to provide a pulsing DC voltage, a DC voltage sensing circuit, a soft start oscillator circuit, an internal DC voltage oscillator reference circuit and an AC power line control circuit.